

REMARKS

1. The Claim Amendments

Claim 6 has been amended to incorporate the limitations of claims 11 and 12 and, further, to recite the functional relationships taught at page 15, lines 3-17 of applicants' specification.

Claim 6 has been further amended to define the notches as extending from the front ends of discharge ports toward the rear ends of the suction ports as taught at page 13, lines 23-25 of applicants' specification.

New claim 14 corresponds to the teaching at page 13, lines 23-25 of applicants' specification.

New claims 15 and 16 correspond to the teaching at page 10, lines 3-6 of applicants' specification.

2. The Drawing Objections

The Examiner's attention is directed to the three drawing replacement sheets filed with the 35 USC 371 filing on July 3, 2006. Note that "Replacement Sheet" 3/3 has the legend "PRIOR ART" added.

Responsive to another of the Examiner's objections a new "Replacement Sheet" 2/3, adding reference numerals 43a, 42a, 43b and 42b, is submitted herewith.

Please delete the sheet with the "A" and "B" legends for FIG. 5 identified at page 2 of the office action.

3. The rejection under 35 USC 112, Second Paragraph

It is respectfully submitted that the rejection has been obviated by the present amendments. Because "one of the pump body and the pump cover is formed of

cast iron and the other is formed of a light alloy”, “the length of the notch formed in the light alloy is longer than that of the notch formed in the cast iron,” regardless of whether that longer notch is in the pump body or the pump cover.

4. The Rejection of Claims 6 and 7 for Anticipation by or Obviousness over Maeno

It is respectfully submitted that the rejection is moot in view of the present amendments to claim 6. Maeno is the prior art reference discussed at length at pages 1-6 of applicants' specification and embodies the problem the present invention was designed to overcome. Specifically, Maeno neither discloses nor suggests structure wherein:

1. The notch in the light alloy member (pump cover or pump body) is longer than the notch in the cast iron member;
2. The notch in the light alloy member has an approximately triangular shape with a width which decreases from the front end of the discharge port toward the rear end of the suction port;
3. The notch in the light alloy member varies in depth along its length, i.e., has an inclined bottom with the depth decreasing from the front end of the discharge port toward the rear end of the suction port; and
4. A working space first communicates with the discharge area through the notch in the light alloy alone, then, upon further rotation, communicates with the discharge area through both the notch in the light alloy and the notch in the cast iron and then, upon yet further rotation, comes into direct communication with the pump body discharge port and the pump cover discharge port.

The Examiner's characterization, at page 5 of the office action, of Maeno's teaching at 8, paragraphs [0046] - [0048] is correct, i.e., Maeno there teaches that

the notch 6f in the cast iron pump body is longer than the notch 6c in the light alloy, as noted at page 3, lines 1 and 2 of applicants' specification. That relationship of Maeno is the opposite of that defined by claim 6. As explained at pages 3-6, especially at page 4, lines 11-19, of applicants' specification, while the prior art structure ("Maeno") "is effective in preventing cavitation erosion when the rotational speed of the oil pump is less than or equal to the predetermined limit," when the rotational speed of the driving gear is higher (for example, 7,500 rpm), an unacceptable level of cavitation erosion occurs adjacent to the pump cover.

5. The Rejection of Claims 8 and 11 for Obviousness over Maeno in view of Watanabe or Josa.

Claims 8 and 11 have been canceled; however, their limitations have been incorporated into claim 6. Accordingly, to the extent that the rejection might be applicable to claim 6 as amended, it is respectfully traversed.

The Examiner cites Watanabe and Josa for disclosure of a notch of approximately triangular shape. However, even if one skilled in the art were to believe, as suggested by the Examiner, that making a notch of Maeno in an approximately triangular shape would "restrain noise, vibration and wear in the pump", the combined reference teachings would not be suggestive of any of the above features 1, 3 and 4 recited by claim 6, as amended.

6. The Rejection of Claim 9 for Obviousness Over Maeno In View of Watanabe or Josa & Further in View of Either Satomoto or Suzuki.

While claim 9 is now canceled, its limitations have been incorporated into claim 6. Accordingly, to the extent the rejection might be applicable to Claim 6, it is respectfully traversed.

Even if “modified Maeno” were to be further modified in view of Satomoto or Suzuki to further have the notch in the light alloy decrease in depth from the front end of the discharge port toward the suction port, that further modified structure would still lack features 1 and 4, above.

7. The Rejection of Claims 12 and 13 for Obviousness Over Maeno in View of Either Satomoto or Suzuki.

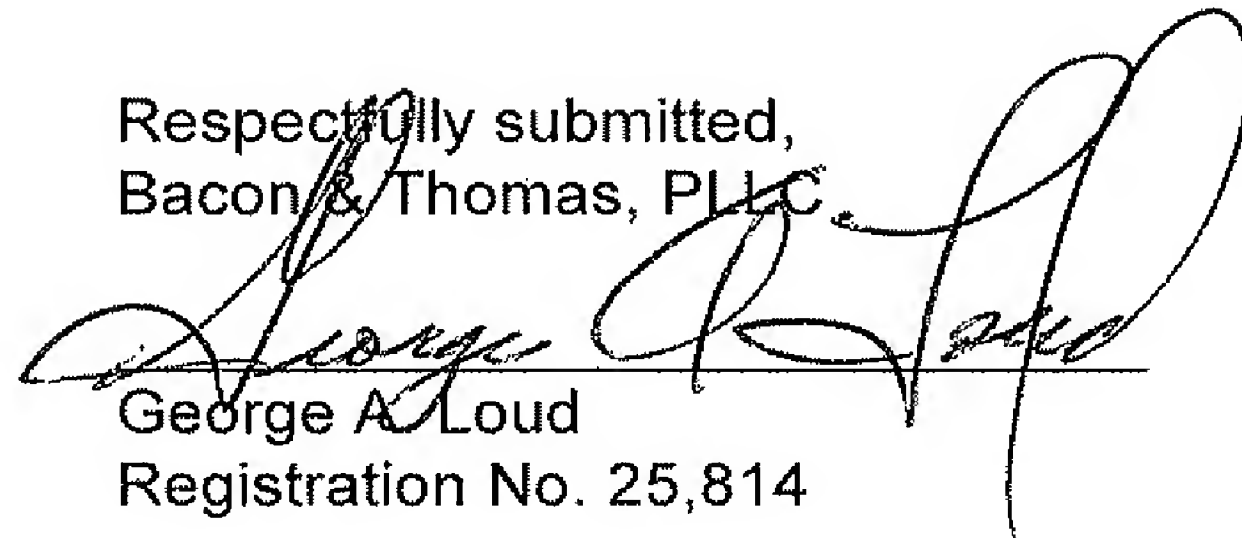
Claims 12 and 13, now canceled, recited the same structure as claim 9. Accordingly, the above comments directed to the rejection as applied to claim 9 are equally applicable to the rejection of claims 12 and 13 to the extent it might be applicable to amended claim 6.

8. The Rejection of Claim 10 for Obviousness Over Maeno in view of Hayabuchi.

While this rejection is in a sense moot in view of the incorporation of the limitations of claims 11 and 12, it should be noted that if the oil pump of Maeno were incorporated into an automatic transmission to serve as its supply of hydraulic pressure and if the notch in the aluminum member were to be modified to have the triangular shape and inclined bottom as defined by amended claim 6, features 1 and 4 outlined above would still be lacking.

In conclusion, it is respectfully requested that the Examiner reconsider and withdraw the rejections of record.

Respectfully submitted,
Bacon & Thomas, PLLC

A handwritten signature in black ink, appearing to read "George A. Loud", is written over a horizontal line. The signature is stylized with large, flowing loops.

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